

ABSTRACT OF THE DISCLOSURE

In a step-up apparatus, a first level shift circuit receives a first clock signal to generate two phase-opposite second clock signals, and a second level shift circuit receives the first clock signal to generate two phase-opposite third clock signals. A charge pump circuit steps up a power supply voltage at a power supply voltage terminal using the second clock signals to generate a positive voltage, and a polarity inverting circuit inverts the positive voltage using the third clock signals to generate a negative voltage whose absolute value is the same as the positive voltage. A high level of the second clock signals is not higher than the positive voltage, and a low level of the second clock signals is not lower than a voltage at a ground terminal. A high level of the third clock signals is not higher than the power supply voltage, and a low level of the third clock signals is not lower than the negative voltage.